



TAC Meeting 2: OSTDS Overview

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Overview

- **Onsite Sewage Treatment and Disposal Systems (OSTDS) 101.**
 - **Conventional and Advanced Systems.**
- **Regulatory Overview.**
 - **Program Transfer by Senate Bill (SB) 712.**
 - **Chapter 62-6, Florida Administrative Code (F.A.C.).**
 - **Requirements for Higher Treatment.**
 - **Approval of Enhanced Nutrient-Reducing Systems.**



Acronym Glossary

ATU:	Aerobic Treatment Unit
BMAP:	Basin Management Action Plan
CBOD:	Carbonaceous Biochemical Oxygen Demand
CHD:	County Health Department
DEP:	Department of Environmental Protection
DOH:	Department of Health
FSAPA:	Florida Springs and Aquifer Protection Act
INRB:	Inground Nitrogen-Reducing Biofilters
NSF:	NSF International (formerly National Sanitation Foundation)
OSTDS:	Onsite Sewage Treatment and Disposal System
PBTS:	Performance-Based Treatment System
SB:	Senate Bill
TAC:	Technical Advisory Committee



OSTDS: Conventional vs. Advanced

- **Onsite Sewage Treatment and Disposal System (OSTDS).**
- **Distinguish for purposes of discussion (not by rule).**
 - **Conventional OSTDS or septic system.**
 - **Consist of septic tank and drainfield.**
 - **Predominant type of OSTDS (>95%).**
 - **Advanced OSTDS.**
 - **Provides more treatment.**
 - **Can include enhanced nutrient reduction.**



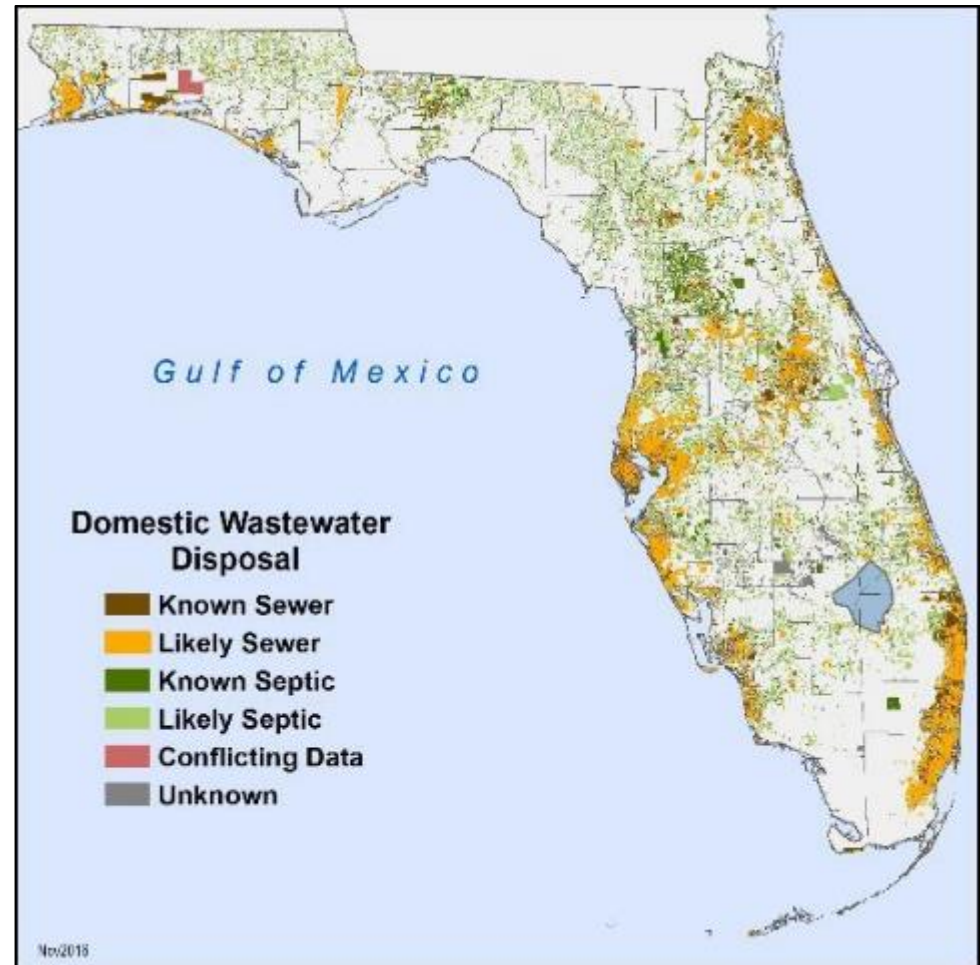
Conventional vs. Advanced

Conventional Systems	Advanced Systems
Provide basic treatment	Provide enhanced treatment (may include enhanced nutrient reduction)
Remove solids, fats, oil, and grease	Removes solids, fats, oil, and grease, and more, e.g., nutrients
Septic tank feeds to drainfield for further treatment	Many include (additional) tanks for treatment prior to drainfield
Drainfields provide 10-50% nitrogen reduction	Some can provide greater than 80% nitrogen reduction
Do not generally require operating permit or regulated maintenance	PBTS/ATUs require operating permit and regulated maintenance (contract and contractor)



OSTDS Overview

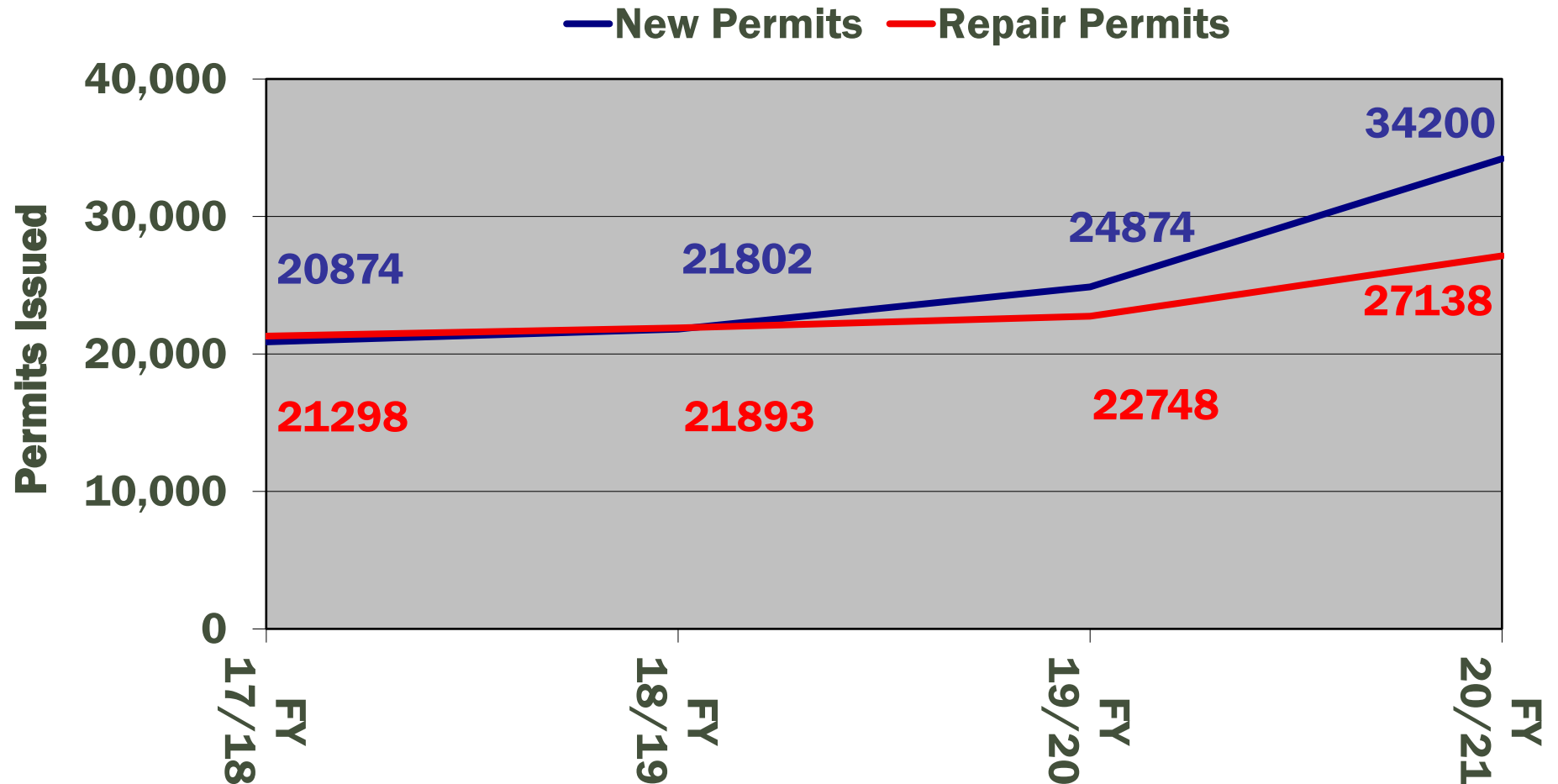
- About 2.4 million OSTDS serve a third of the state.
- OSTDS are an effective alternative to central sewer.



Florida Water Management Inventory, 2018



Construction Permits





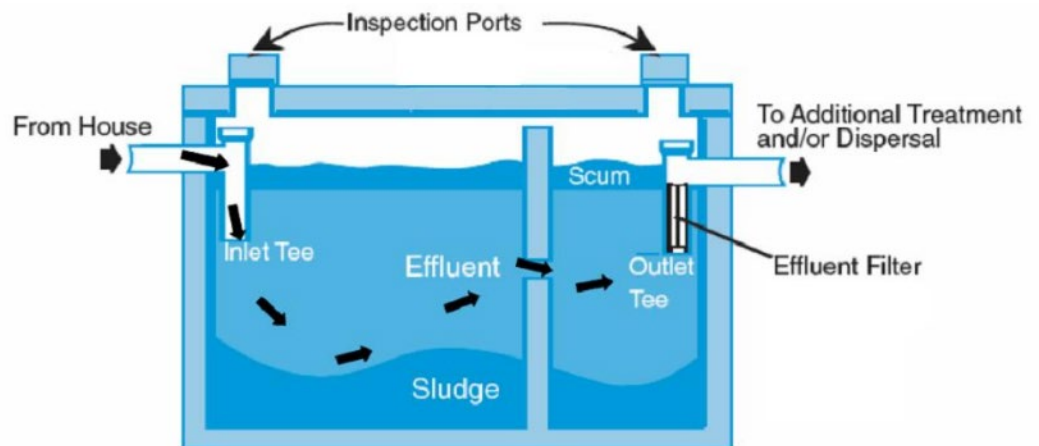
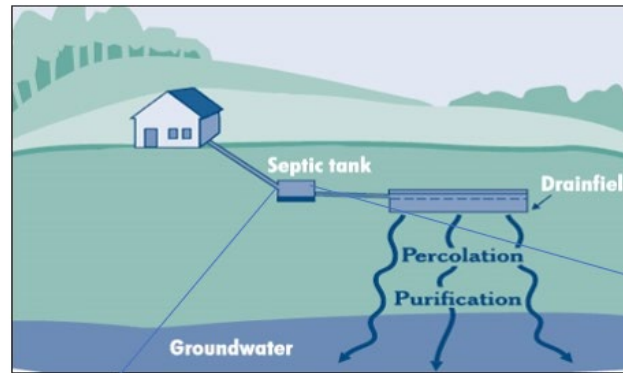
Modern OSTDS Protect Public Health and the Environment

- **Primarily protect public from waterborne illness.**
 - Rules set protective distances from OSTDS.
 - Rules ensure treated sewage is below ground surface.
- **Density of OSTDS is tied to drinking water source:**
 - Private wells lot size 0.5 acre, 1,500 gallons per day (gpd)/acre.
 - DEP public water supply not more than four lots/acre, 2,500 gpd/acre.
- **Florida can and does establish policies for additional protection of sensitive environmental areas.**



How Does a Septic Tank Work?

- **Collect solids and consume a third to half of biodegradable material.**
- **Modern septic tanks are watertight.**



Multi-compartment Septic Tank

Adapted from: EPA Onsite
Wastewater Treatment Systems
Manual, 2002



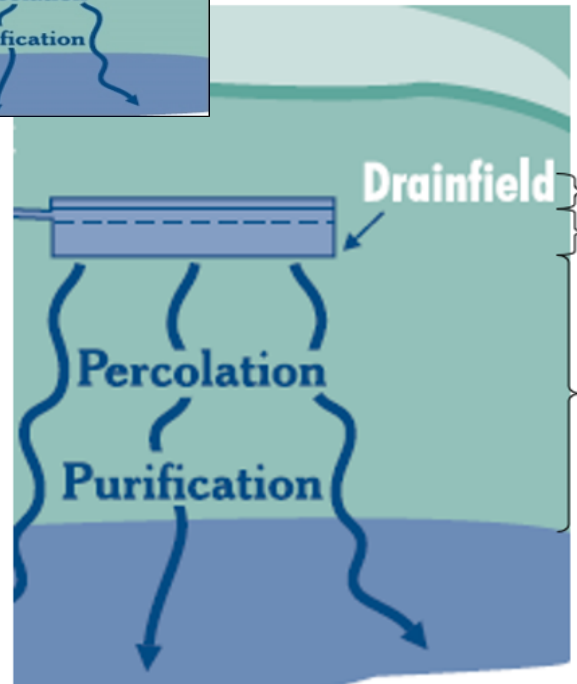
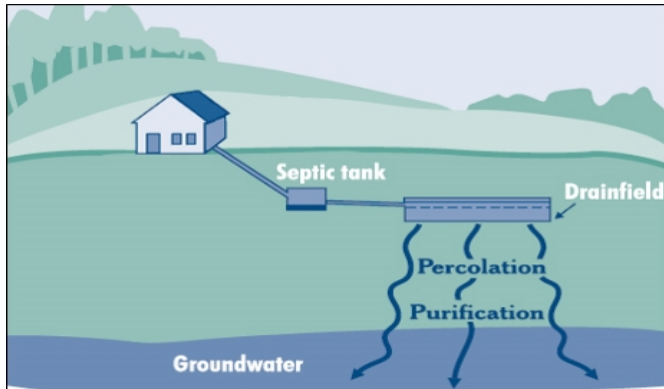
How Does a Drainfield Work?

- Liquid that comes from septic tank drains into soil.
- Soil/Air/Water combination:
 - Removes/filters pathogens, suspended solids in the area above groundwater.
 - Removes 10-50% of nitrogen.





Drainfield Design



Six inch minimum between top of drainfield and ground surface

Drainfield thickness (12 inch for gravel)

Two feet between bottom of drainfield and wet season water table required to provide air and soil treatment



Mound as Alternative Drainfield

A system can be elevated (mound system) to protect the environment.

- **Shallow wet season water table.**
- **Unsuitable soils (e.g., rock) exist.**





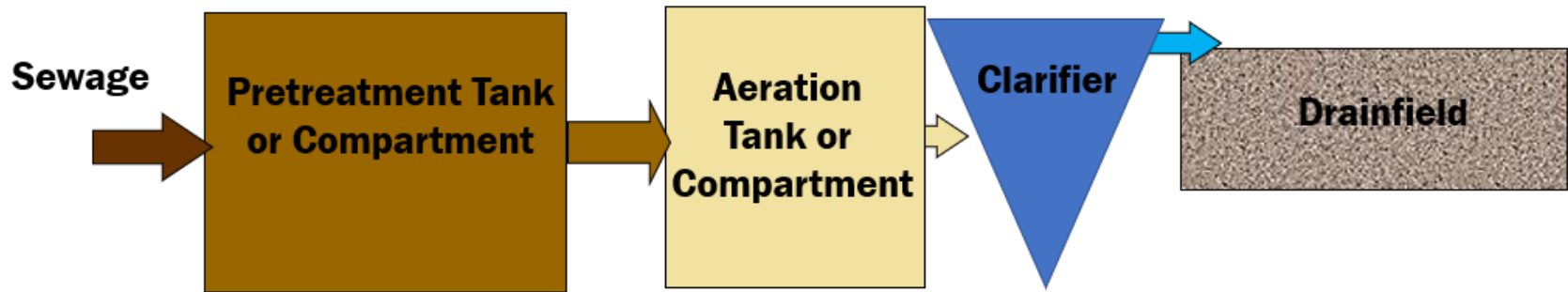
Options for Nutrient Reduction

To limit OSTDS-contribution of nutrients (in general or for specific areas):

- **Lower the number of OSTDS.**
 - **Sewer.**
 - **County ordinances (lot size, setback).**
 - **Existing statute density-limitations [sections 381.0065(4)(a)-(g), Florida Statutes (F.S.)].**
- **Require higher treatment by OSTDS (advanced systems).**
- **Historically, attention has been on nitrogen.**



Aerobic Treatment Unit (ATU)



ATU certification based on third-party certification to specific standards

- All ATUs must meet NSF International (NSF) Standard 40 (not rated for nitrogen removal).
- Some are certified to meet a 50% nitrogen-reduction standard (NSF Standard 245).

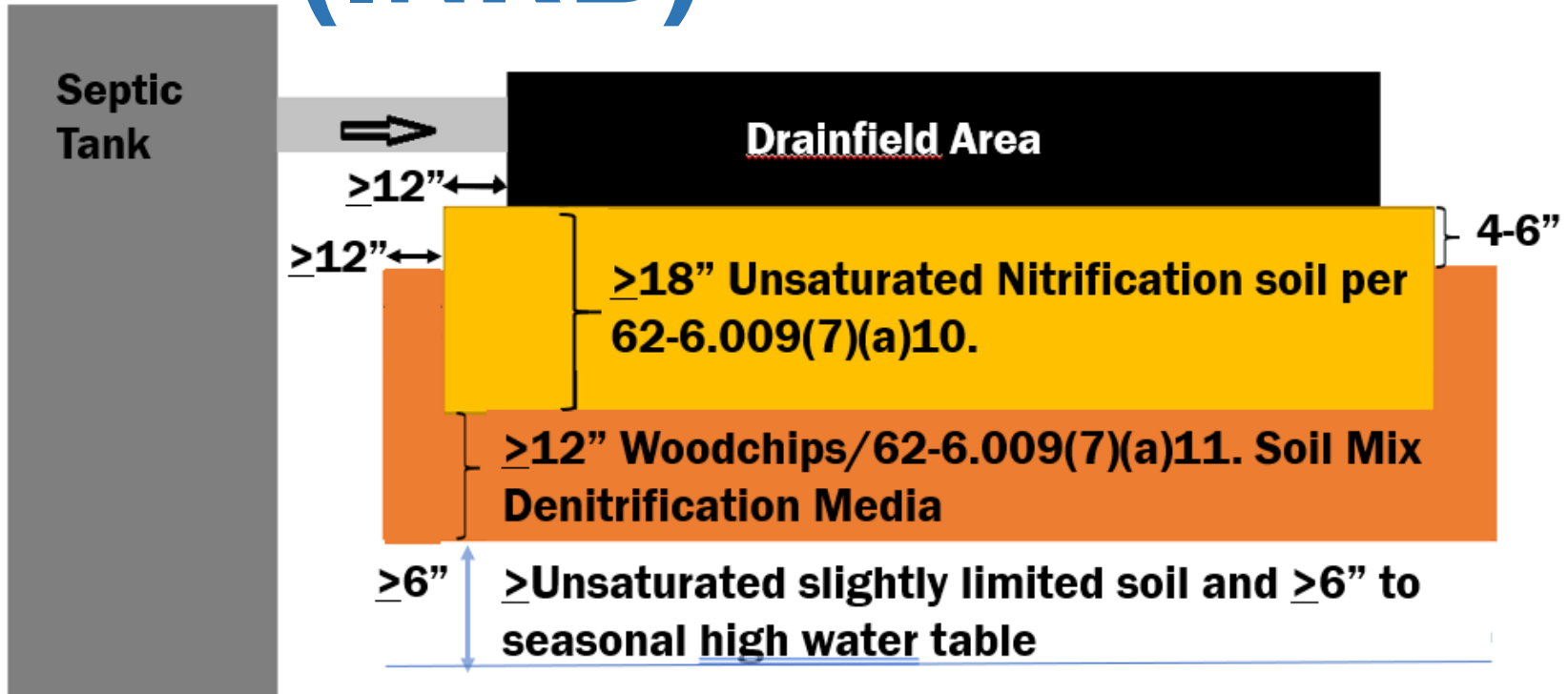


Performance-Based Treatment System (PBTS)

- **Specialized OSTDS permitting category.**
- **In many cases, includes an ATU.**
- **Designed and certified by professional engineer to achieve specific and measurable established performance standards for:**
 - **Carbonaceous biochemical oxygen demand (CBOD).**
 - **Total suspended solids.**
 - **Total nitrogen.**
 - **Total phosphorus.**
 - **Fecal coliforms.**



In-ground Nitrogen-Reducing Biofilter (INRB)



- Addition to a conventional system.
- Nitrate-reducing layer below drainfield; material reacts with nitrate.



Regulations and Program Transfer





Program Transfer

2020 SB 712 (Chapter 2020-150, Laws of Florida)

- **Transfer of Florida Department of Health (DOH) Onsite Sewage Program (OSP) on July 1, 2021, to the Florida Department of Environmental Protection (DEP).**
 - **OSP office staff moved into DEP's Division of Water Resource Management.**
 - **OSP staff in DOH County Health Departments (CHDs) remain at CHDs.**
- **Chapter 64E-6, F.A.C. becomes Chapter 62-6, F.A.C.**
 - **Rules and forms remain the same.**
- **Creates the OSTDS Technical Advisory Committee (OSTDS TAC).**



Chapter 62-6, F.A.C. Summary

Standards for Onsite Sewage Treatment and Disposal Systems

- **Sections 62-6.001-6.0151, F.A.C.: Requirements for OSTDS in general.**
 - New, modification, repair, abandonment application and permit standards.
 - Construction and material requirements (tanks, drainfields).
 - Conventional systems, INRBs and ATUs.
- **Sections 62-6.017-6.0182, F.A.C. – Florida Keys.**
- **Sections 62-6.019-6.023, F.A.C. – Registration of septic tank contractors and authorization of partnerships and corporations.**
- **Sections 62-6.025-6.0295, F.A.C. – Performance-based treatment systems.**
- **Section 62-6.030, F.A.C. – Fees.**

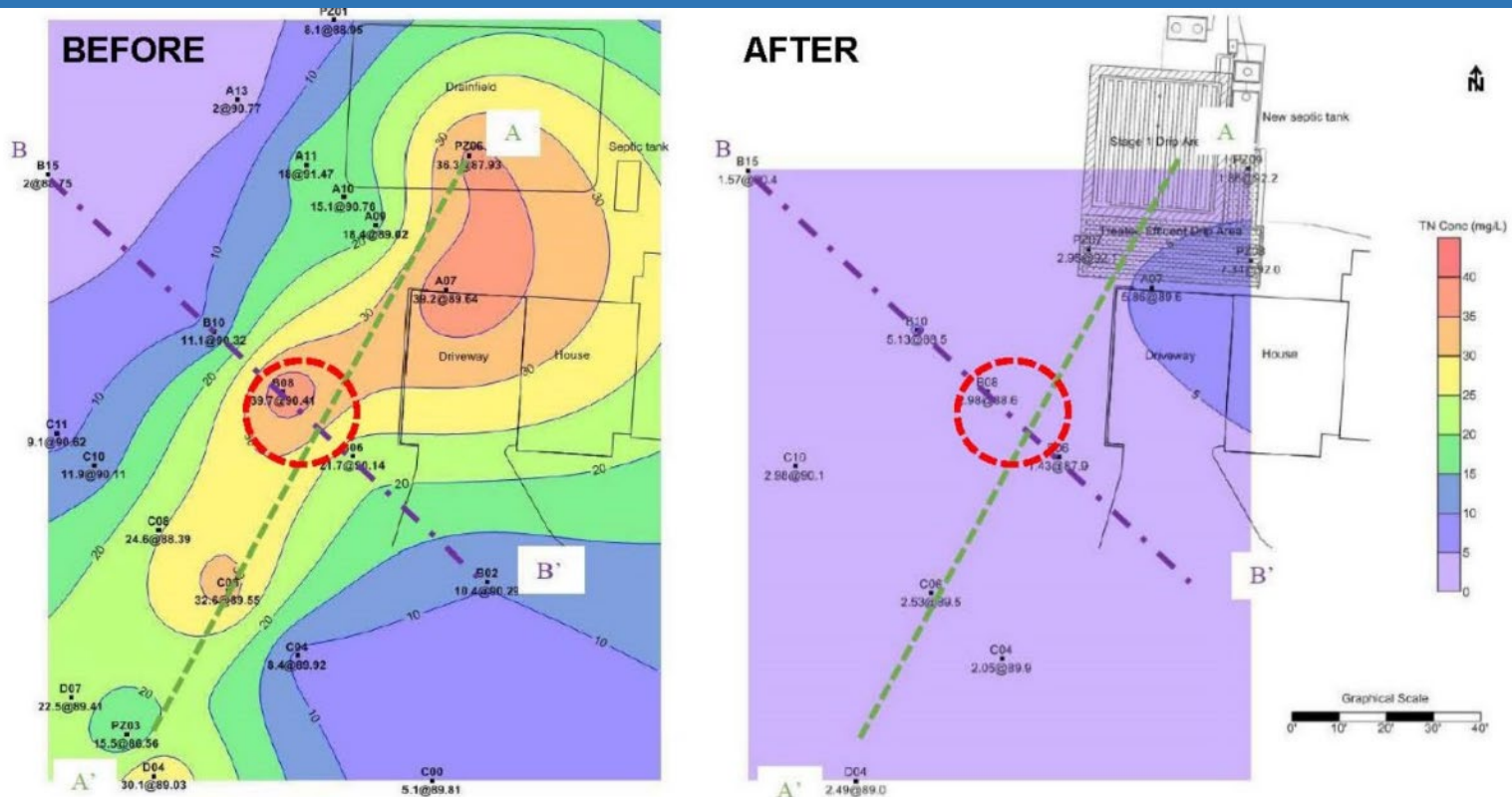


Chapter 62-6, F.A.C., SB 712 Revisions

- **Requires DEP to adopt rules.**
- **Creates OSTDS Technical Advisory Committee to address:**
 - **Increasing nutrient-reducing OSTDS in the marketplace.**
 - **Regulatory options to facilitate introduction and use of NSF Standard 245 systems.**
 - **Setback distances to surface water, groundwater and wells.**
- **OSTDS remediation plans in BMAP areas.**



Requirements for Higher Treatment





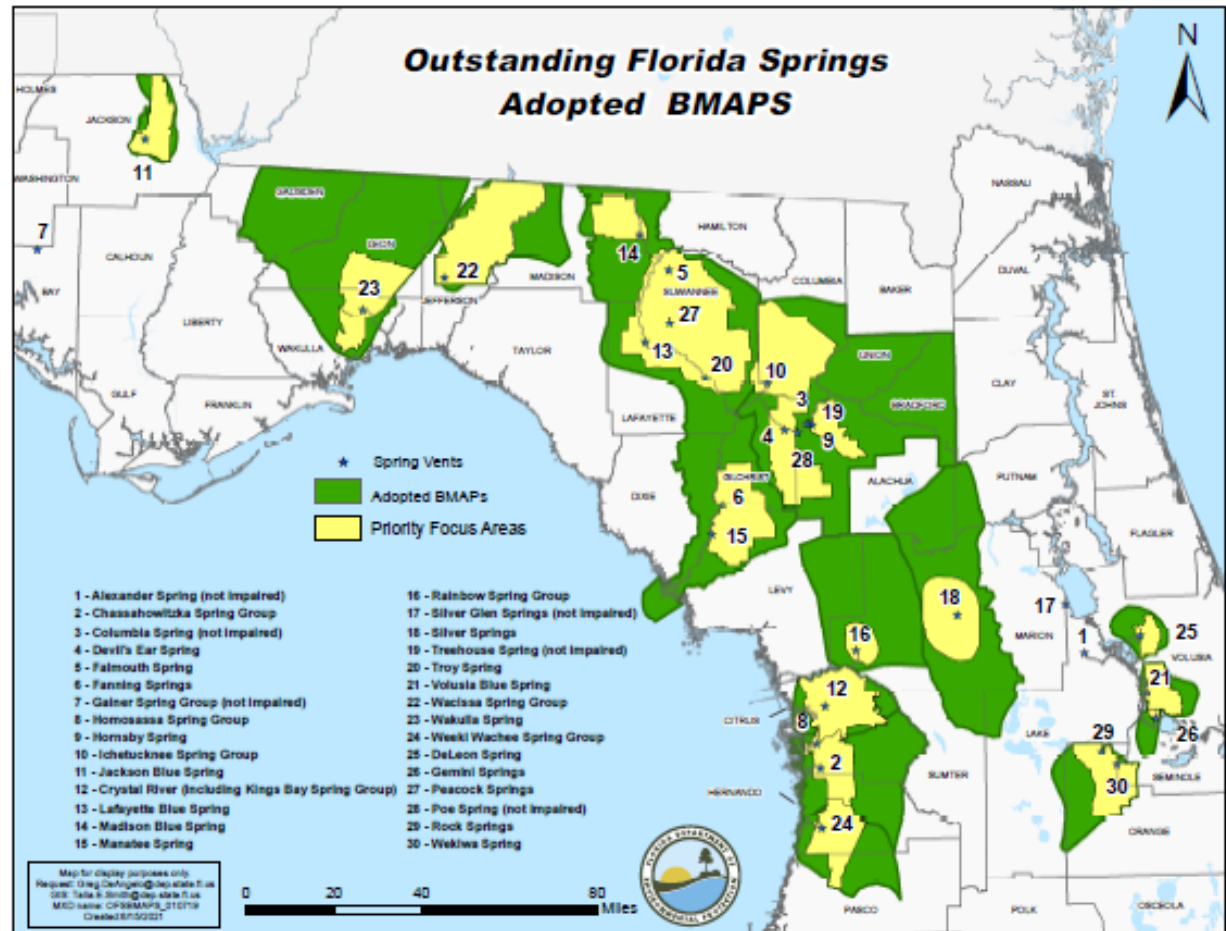
Policies Requiring Higher Treatment

- **Statute addresses areas with water quality concerns: Florida Keys, Aucilla and Suwannee Rivers.**
- **Statute enabling higher treatment in exchange for permitting on challenging lots (PBTS).**
- **Some local ordinances require ATUs, greater water table separation, nitrogen reducing systems.**
- **Florida Springs and Aquifer Protection Act (FSAPA) prohibits new conventional OSTDS in conflict with OSTDS remediation plans of Spring BMAPs in some areas.**
- **SB 712 expands OSTDS remediation plans to other BMAP areas.**



Spring BMAPs

- BMAPs establish requirements in OSTDS remediation plans.
- Current (FSAPA): New permits, small lots, in Priority Focus Areas (PFAs)
 - Connect to central sewer or require a nitrogen-reducing system.
- Future: Existing system requirements and new permit policy expansion.
- OSP implements permitting through CHDs.





Approval of Enhanced Nutrient-Reducing Technology

- ***ATU (Product Approval).***
- ***PBTS (Innovative System Permitting [ISP]).***



Approval of Enhanced Nutrient-Reducing Technologies (ATUs)

Product approval based on certification and testing reports to standards NSF Standards 40/NSF 245 and compliance with section 62-6.012, F.A.C.

- **Product manual review.**
- **Proof of at least one maintenance entity in the state.**
- **Spare parts/wiring requirements.**
- **Compliance with other parts of the rule.**
 - **Tank approval/additive review.**

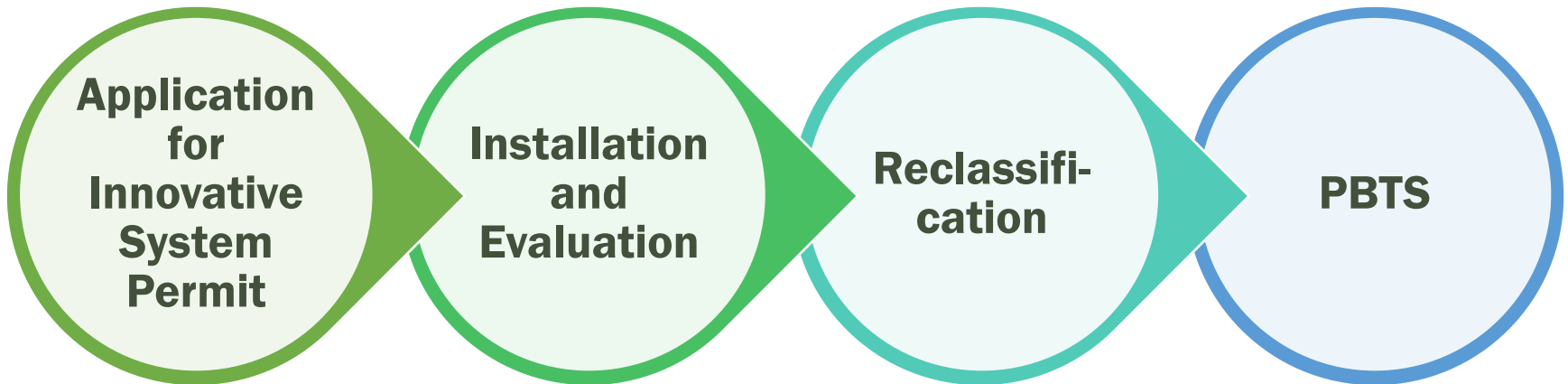


Approval of Innovative Systems for Use in Florida

- **Starting in the 1980s, the Florida Legislature began to address how to approve innovative OSTDS technologies in Florida.**
 - **Soil and other conditions often unique to Florida.**
 - **Failed technology costs citizens.**
- **Innovative System Permitting (ISP) Process implemented.**
 - **Requires limited testing of new technology systems.**
 - **Technology monitored for a period of time.**
 - **Regulatory and functional issues resolved.**
 - **Satisfactory performance leads to statewide approval for use.**



Approval of Enhanced Nutrient-Reducing Technologies (PBTS/ISP)





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